INCH-POUND

MIL-PRF-1/505H
6 August 2004
SUPERSEDING
MIL-PRF-1/505G
27 January 1999

PERFORMANCE SPECIFICATION SHEET

ELECTRON TUBE, GAS

TYPE 5962

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the electron tube described herein shall consist of this document and the latest issue of MIL-PRF-1.

DESCRIPTION: Voltage regulator, corona discharge.

See figure 1.

Mounting position: Any.

Weight: 0.3 ounce (8.5 grams) nominal.

ABSOLUTE RATINGS:

Parameter:	Ez	Eb	Ib	TA	Barometric pressure, reduced
Unit:	V dc	V dc	µA dc	°C	mmHg
Maximum:	750	715	55	+75	- - -
Minimum:	- - -	685	5	-55	55
Test conditions:	- - -	- - -	- - -	25 ± 5	- - -

GENERAL:

Qualification - Not required.

TABLE 1. Testing and inspection.

Inspection	Method MIL-STD-1311	Notes	Conditions	Acceptance Level (see note 8)	Symbol	Limits Min	Limits Max	Units
Conformance inspection, part 1								
Ionization voltage	3347	3		0.65	Ez	- - -	730	V dc
Voltage drop	3337	- - -	Ebb/Ib = 25 ± 2 µA dc	0.65	Eb(1)	690	710	V dc
Regulation	3335	4	Ib = 5 to 55 µA dc	0.65	ΔEb	- - -	15	V dc
Peak current	- - -	5	Ebb/Ib = 200 µA dc	0.65	- - -	- - -	- - -	- - -
Holding period end points:	- - -							
Ionization voltage	3347	6		0.65	Ez	- - -	730	V dc
Change in voltage drop	- - -	6		0.65	ΔEb(1)	- - -	± 3	V dc
Regulation	3335	6		0.65	ΔEb	- - -	15	V dc
Peak current	- - -	6		0.65	- - -	- - -	- - -	- - -
Conformance inspection, part 2								
Low-frequency vibration	1031	1	No voltages applied	- - -	- - -	- - -	- - -	- - -
Low-temperature operation:	1026	- - -	T = -55 °C					
Ionization voltage	3347	- - -		- - -	Ez	- - -	730	V dc
Change in voltage drop	- - -	- - -		- - -	ΔEb(1)	- - -	+2, -5	V dc
Regulation	3335	- - -		- - -	ΔEb	- - -	15	V dc
Peak current	- - -	- - -		- - -	- - -	- - -	- - -	- - -
High-temperature operation:	1026	- - -	T = 75 °C					
Ionization voltage	3347	- - -		- - -	Ez	- - -	730	V dc
Change in voltage drop	- - -	- - -		- - -	ΔEb(1)	- - -	-2, +8	V dc
Regulation	3335	- - -		- - -	ΔEb	- - -	15	V dc
Peak current	- - -	- - -		- - -	- - -	- - -	- - -	- - -
Leakage current	3305	- - -	Eb = 500 V dc (min); relative humidity = 90 percent ± 5%	- - -	LIb	- - -	0.5	µA dc

See notes at end of table I.

TABLE 1. Testing and inspection - Continued.

Inspection	Method MIL-STD-1311	Notes	Conditions	Acceptance Level (see note 8)	Symbol	Limits Min	Limits Max	Units
Conformance inspection, part 3								
Life test	- - -	- - -	Group B; Ebb/IB = 55 ± 5 µA dc t = 500 hours	- - -	- - -	- - -	- - -	- - -
Life-test end points:	- - -							
Voltage drop	3337	- - -		- - -	Eb(1)	685	715	V dc
Regulation	3335	- - -		- - -	ΔEb	- - -	15	V dc
Ionization voltage	3347	- - -		- - -	Ez	- - -	730	V dc
Peak current	- - -	- - -		- - -	- - -	- - -	- - -	- - -
Shock	1041	2, 7	300 G	- - -	- - -	- - -	- - -	- - -
Barometric pressure, reduced	1002	7	Pressure = 55 mmHg; Eb = 750 V dc	- - -	- - -	- - -	- - -	- - -

NOTES:

1. Criterion for passing this test shall be compliance after test with the initial requirements for voltage drop and regulation.

2. Electrical samples shall not be used for this test. Ten additional samples shall be submitted for shock test only. Criterion for passing this test shall be compliance after test of at least 80 percent of the tubes with the initial requirements for voltage drop and regulation.

3. The tube under test shall not have been conducting for at least 30 minutes prior to test. During this test, the regulator tube shall not be exposed to external sources of radiation and shall be shielded from light. No conditioning current is permitted.

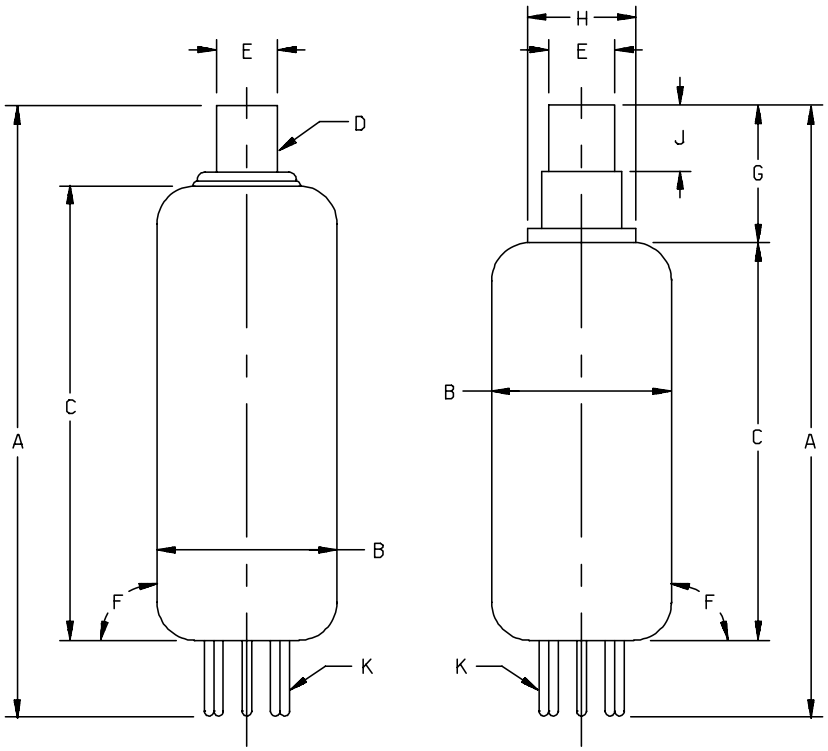
4. ΔEb maximum shall not be exceeded anywhere within the range 5 to 55 µA dc. In testing for regulation, current shall be varied continuously through the range of 5 to 55 µA dc.

5. Ebb shall be increased continuously until Ib = 200 µA dc. The voltage drop shall not go below its value at Ib = 55 µA dc.

6. The holding period commences upon completion of the initial performance of the specified tests. At the conclusion of the holding period, the specified tests will be performed again. Of the tubes failing the holding period end-point tests, those which fail with respect to voltage drop only, may be retested after an additional 30-day period. Eb(1) is the voltage drop measured at the beginning of a holding period.

7. This test shall be performed during the initial production and once each succeeding 12-calendar months in which there is production. An accept on zero defect sampling plan shall be used, with sample of three tubes with an acceptance number of zero. In the event of failure, the test will be made as a part of conformance inspection, part 2, with an acceptance level of 6.5 (see note 8). The “12-calendar month” sampling plan shall be reinstated after three consecutive samples have been accepted.

8. This specification sheet uses accept on zero defect sampling in accordance with MIL-PRF-1, table III.



ALTERNATIVE DRAWINGS

Dimensions in inches with metric equivalents (mm) in parentheses		
Ltr	Minimum	Maximum
Conformance inspection, part 2		
A	2.500 (63.50)	2.688 (68.28)
B		0.750 (19.05)
C	1.703 (43.26)	2.094 (53.19)
Conformance inspection, part 3 (see note)		
D	Cap: Skirted miniature C1-3	
K	Base: E7-1	
E	0.245 (6.22)	0.255 (6.48)
F	86.5°	93.5°
Reference dimensions		
G	0.600 (15.24)	
H	0.420 (10.67)	
J	0.281 (7.14)	

Pin Connections	
Pin No.	Element
1	k
2	k
3	k
4	k
5	k
6	k
7	k
cap	a

NOTE:

Dimensions shall be checked during the initial production and once each succeeding 12-calendar months in which there is production. An accept on zero defect sampling plan shall be used, with sample of three tubes with an acceptance number of zero. In the event of failure, the test will be made as a part of conformance inspection, part 2, with an acceptance level of 6.5 (see note 8). The “12-calendar month” sampling plan shall be reinstated after three consecutive samples have been accepted.

FIGURE 1. Outline drawing of electron tube type 5962.

NOTES

Referenced documents. In addition to MIL-PRF-1, this specification sheet sheet references MIL-STD-1311.

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the previous issue.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5960-3712)

Reviewing activities:
Army - CR4
Navy - AS, CG, MC, OS
Air Force - 99

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at www.dodssp.daps.mil.